

Release Notes

hp StorageWorks Continuous Access EVA

Product Version: v1.2

Eleventh Edition (October 2004)

Part Number: T3661-96002

This document provides information about HP StorageWorks Continuous Access EVA not covered elsewhere in user documentation. Individuals responsible for configuring, installing, and using the Continuous Access EVA solution should refer to this document for last-minute content.

For the latest version of these release notes and other Continuous Access EVA documentation, access the HP storage web site at <http://h18000.www1.hp.com/storage/software.html> and navigate to the Continuous Access EVA product page. Click the **technical documentation** link to access the technical support page. Click **manuals (guides, supplements, addendums, etc.)** for a list of related documentation.



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About this document

This section describes the content reflected in this document, including:

- Release notes information
- Intended audience
- Related documentation

Release notes information

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Intended audience

This document is intended for customers who have purchased HP StorageWorks Continuous Access EVA and for HP-authorized service providers responsible for installing, configuring, and maintaining these systems.

Related documentation

In addition to this guide, HP provides the documentation listed below. To obtain these and other related documents, browse to your product from the HP storage web site at <http://h18006.www1.hp.com/storage/software.html> or go directly to the product link listed below. From there, click the **technical documentation** link. Either a list of documentation is displayed, or you are taken to a technical support page where you can select **manuals (guides, supplements, addendums, etc.)**.

For Continuous Access EVA, go to the following link to obtain the listed documents:

<http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html>

- *HP StorageWorks Continuous Access EVA v1.1B Design Reference Guide*

- *HP StorageWorks Continuous Access EVA v1.1B Operations Guide*
- *HP StorageWorks Continuous Access EVA v1.1 Getting Started Guide*
- *HP StorageWorks Continuous Access EVA User Interface v1.1A Installation Guide*
- *HP StorageWorks Continuous Access EVA User Interface v1.1A Release Notes*
- *HP StorageWorks Continuous Access and Data Replication Manager SAN Extensions Reference Guide*
- *HP StorageWorks Continuous Access EVA User Interface Installation Guide Addendum*
- *HP StorageWorks Continuous Access EVA User Interface Release Notes*

For the EVA3000, go to:

<http://h18006.www1.hp.com/products/storageworks/eva3000/index.html>

For the EVA5000, go to:

<http://h18006.www1.hp.com/products/storageworks/enterprise/index.html>

For Storage Management Appliances or Command View EVA, go to:

<http://h18006.www1.hp.com/products/sanworks/managementappliance/index.html>

For SAN design or SAN extensions, go to:

<http://hp.com/go/sandesignguide>

Reading related documents

Please use the table below to update the terminology in earlier versions of Continuous Access documents.

Table 1: Later versions and added components

References to	Also apply to
Storage Management Appliance (SMA)	Management server
Command View EVA 3.2	Command View EVA 3.3
Storage Operations Manager 1.1	Storage Operations Manager 1.2
Continuous Access EVA 1.1, 1.1a, 1.1b	Continuous Access EVA 1.2
Business Copy 2.2	Business Copy 2.3
VCS 3.010	VCS 3.014 and VCS 3.020
SMI-S 3.2	SMI-S 3.3

What's new

This section summarizes highlights, enhancements, and support requirements of Continuous Access EVA v1.2. For VCS feature changes affecting the system hardware, refer to the EVA3000 and EVA5000 release notes.

Solution highlights

The following changes to Continuous Access EVA are included in this release:

- Continuous Access EVA can now be installed on a Windows-based server. Refer to *HP StorageWorks Continuous Access EVA User Interface Installation Guide Addendum* to install Continuous Access EVA on a Windows server. To install Continuous Access EVA on a Storage Management Appliance, refer to *HP StorageWorks Continuous Access EVA User Interface v1.1A Installation Guide*.
- See [Table 2](#) for the hardware and software requirements for specific solution versions of Continuous Access EVA.

Table 2: Continuous Access EVA Compatibility Matrix by Release

Component	Continuous Access EVA v1.0 & 1.0A	Continuous Access EVA v1.1, 1.1A, & 1.1B	Continuous Access EVA v1.2
EVA3000 storage systems	No	Yes	Yes
EVA5000 storage systems	Yes	Yes	Yes
Storage Management Appliance software v2.0 with service pack 1a	Yes	No	No
Storage Management Appliance software v2.1	No	Yes	Yes
Continuous Access User Interface v1.0	Yes	No	No
Continuous Access User Interface v1.1A	No	Yes	No
Continuous Access User Interface v1.2	No	No	Yes
Command View EVA v3.0 & v3.0A	Yes	No	No
Command View EVA v3.1	No	Yes (v1.1 & v1.1A)	No
Command View EVA v3.2	No	Yes (v1.1B only)	No
Command View EVA v3.3	No	Yes (v1.1B only)	Yes
Business Copy EVA v2.1A	Yes	No	No
Business Copy EVA v2.2	No	Yes	Yes
Virtual Controller Software v3.00	Yes	No	No
Virtual Controller Software v3.01	No	Yes (v1.1 & v1.1A)	Yes
Virtual Controller Software v3.02	No	Yes (v1.1B only)	Yes

SAN extension products

The *HP StorageWorks Continuous Access and Data Replication Manager SAN Extensions Reference Guide* lists supported Fibre Channel over Internet Protocol products. All WDM products are permitted with Continuous Access EVA and Data Replication Manager (DRM).

Operating system support matrix

[Table 3](#) lists current and historical hardware items and software versions supported by those operating systems compatible with Continuous Access EVA v1.2 and subsequent updates. In all cases the current version is preferred or recommended over earlier versions. Planned migration to the current version should be performed as soon as practical.

Operating systems are listed by vendor in the left column. Each item in the same row and listed to the right is supported by that operating system. To use this table, select an operating system and operating system version, then move to the right and select an FCA. Supported FCA firmware is located to the right, followed by the driver and Secure Path versions for the FCA. In the far right column is a brief statement about cluster support for that operating system and version.

Table 3: Operating system support matrix

Operating system	OS version	FCA	Adapter firmware	Adapter driver	Secure Path	Clustering
HP-UX	11.0 (32-bit)	A5158A 1Gb PCI A6685A 1Gb HSC A6795A 2Gb PCI	Native	Native	3.0bSP1, 3.0d, or 3.0e	ServiceGuard V11.14 Max: 4 nodes
	11i11 (64-bit)	A5158A 1Gb PCI A6685A 1Gb HSC A6795A 2Gb PCI	Native	Native	3.0bSP1, 3.0c, or 3.0d	ServiceGuard V11.14, V11.15 Max: 4 nodes
		A6826A 2Gb A9782A 2 Gb A9784A 2Gb	Native	Native	3.0c or 3.0d	
	11.23 (64-bit)	A6795A 2Gb PCI A6826A 2Gb PCI A9782A 2Gb A9784A 2 Gb	Native	Native	3.0c or 3.0d	ServiceGuard V11.15.01 or V11.16 Max: 4 nodes
HP OpenVMS	7.2-2 with VMS722_FIBRE_ SCSI- V0400	LP8000 or LP9002 (FCA2354)	3.91a1 or 3.92a0	Native	Native	VMSCluster Max: 96 nodes
		LP9802 (FCA2384)	1.00x8 or 1.81a1			
	7.3-1 with VMS731_FIBRE_ SCSI- V0400	LP8000 or LP9002 (FCA2354)	3.91a1 or 3.92a0			
		LP9802 (FCA2384)	1.00x8 or 1.81a1			
	7.3-2 with TIMA kit	LP8000 or LP9002 (FCA2354)	3.91a1 or 3.92a0			
		LP9802 (FCA2384)	1.00x8 or 1.81a1			
HP Tru64 UNIX	5.1a BL21 PK4 5.1b BL22 PK2	LP8000	3.91a1 or 3.92a0	Native	Native	TruClusters Max: 8 nodes
		LP9002 (FCA2354)	3.91a1 or 3.92a0			
		LP9802 (FCA2384)	1.00x8 or 1.81a1			
		LP100000 or LP100000DC	1.81a5			
IBM-AIX	4.3.3, 5.1, 5.2	Cambex 1Gb PCI (PC1000F)	2.02.08	1.5.25.3	2.0d SP2	HACMPv4.4.1, v4.5, v5.1 Max: 2 nodes
		Cambex 2Gb PCI (PC2000LH)	3.02.10			

Table 3: Operating system support matrix (Continued)

Operating system	OS version	FCA	Adapter firmware	Adapter driver	Secure Path	Clustering
Microsoft® Windows NT® (Intel) Windows® 2000 Server and Advanced Server (32-bit) Windows Server 2003, Enterprise Edition (32-bit)	4.0 SP6a	LP8000 LP9002DC LP952 LP982 LP9802	3.82a1 BIOS 1.60a2	5-4.82a9 5-4.82a16	4.0b 4.0b, 4.0c, or 4.0cSP1	NT—2 nodes Windows 2000 Server—none
	5.0 SP2, SP3, SP4		3.91a1 BIOS 1.63a1	5-4.82a16	4.0b, 4.0c, or 4.0cSP1	Windows 2000 Advanced Server—MSCS V1.1 & Oracle 9iRAC; max: 2 nodes
			1.81a2 BIOS 1.70a1	5-5.10a10	4.0cSP1	
	6.0 SP1		1.81a2 BIOS 1.70a1	5.1.02a5 (Storport) QFE 837413	4.0b or 4.0c	Windows Server 2003, Enterprise edition—MSCS & Oracle 9iRAC; max: 4 nodes
		QLA2340 QLA2342 BL20P Mezzanine card (not supported on NT)	1.34	9.00.13	4.0b, 4.0c, or 4.0cSP1	
			1.34	9.00.19 (Storport) QFE 837413	4.0cSP1	
		LP1050 LP1050DC (not supported on NT)	3.82a1 BIOS 1.61a2	5.4.82a16	4.0b, 4.0c, or 4.0cSP1	Windows Server 2003, Enterprise edition—MSCS & Oracle 9iRAC; max: 8 nodes
			1.81a3 BIOS 1.70a1 1.81a3 BIOS 1.70a	5.5.10a10 5-1.02a5 (Storport) QFE 837413	4.0cSP1	
Microsoft Windows Server 2003 Enterprise Edition (64-bit) and Datacenter (64-bit)	6.0 SP1	LP9802	1.81a2 BIOS 3.00a	6-5.10a10	4.0c or 4.0c SP1	
			1.81a3 (Storport) BIOS 3.00a9	6-1.02a5 (Storport) QFE 837413	4.0c SP1	
		LP10050 LP10050DC	1.81a2 BIOS 3.00a	6-5.10a10	4.0c or 4.0c SP1	
			1.81a3 (Storport) BIOS 3.00a9	6-1.02a5 (Storport) QFE 837413	4.0c SP1	
Novell NetWare	5.1 SP6 or SP7 6.0 SP3, SP4, or SP5 6.5, 6.5 SP1, or 6.5 SP2	QLA 2340 (FCA2214, formerly named FCA2210)	1.34	6.50y, 6.51, 6.51B	3.0c SP1 or 3.0c SP2	N5.1 supports NCS V1.01 (6 nodes max) 6.0 supports NCS V1.06 (6 nodes max) 6.5 supports NCS V1.7 (12 nodes max) Up to 17 nodes supported via DET

Table 3: Operating system support matrix (Continued)

Operating system	OS version	FCA	Adapter firmware	Adapter driver	Secure Path	Clustering
Red Hat Linux (32-bit)	AS 2.1 U2 2.4.9-e.25smp and enterprise	QLA 2340 (FCA2214) QLA 2342 (FCA2214DC)	1.33	6.04	SP3.0a	Lifekeeper 4.03
	AS 2.1 U2 2.4.9-e.27smp and enterprise		1.34	6.06.50	SP3.0b	Lifekeeper 4.04
	AS2.1 U3 2.4.9-e.38smp and enterprise	QLA 2340 (FCA2214) QLA 2342 (FCA2214DC) FC Mezzanine Card for BL20P		7.00.03	3.0c Native Multipath Driver	Serviceguard 11.14.02 Lifekeeper 4.5
	AS3.0 U2 2.4.21-15.Elsm				SP3.0c SP1 with Special Kernel Errata Native Multipath Driver	Serviceguard 11.15.02 Lifekeeper 4.5
Red Hat Enterprise Linux Advanced Server (64-bit)	AS 2.1 QU3	A6826A	N/A	6.06.50 7.00.03	SP3.0b SP3.0c Native Multipath Driver	None
	AS 3.0 QU2			7.00.03	SP3.0c Native Multipath Driver	Serviceguard 11.15.02
Sun Solaris	2.6, 7, or 8	JNI FCI-1063 (32-bit PCI)	3.0.3	2.5.9-03	3.0aSP1, 3.0b, 3.0bSP1, 3.0c, 3.0cSP1, or 3.0d	Veritas Foundation Suite v3.5 Veritas Cluster 3.5 mp2 Volume Manager v3.5 mp2 2-node cluster, Solaris 8 only
		JNI FC64-1063 (64-bit Sbus)	13.3.7	2.6.13		
		QLA2310 PCI 2Gb (FCA2257P)	FC 2.00.03/ 2.24/2.26	3.26 4.11		
		QLA2202 Sbus 1Gb (FCA2257S)		4.13.01		
		QLA2202 cPCI 1Gb (FCA2257C)	FC 2.2.4/2.2.6	4.11		
	9	QLA2310 PCI 2Gb (FCA2257P)	FC 2.00.05 FC 3.2.9	3.26 4.11	3.0b, 3.0bSP1, 3.0c, 3.0cSP1, or 3.0d	Sun Clusters v3.1 Veritas Volume Manager v3.5 mp2 8-node cluster,
		QLA2202 Sbus 1Gb (FCA2257S)	FC 2.00.03/ 2.25/2.26	4.13.01		
		QLA2202 cPCI 1Gb (FCA2257C)	FC 2.24/2.26	4.11		

Table 3: Operating system support matrix (Continued)

Operating system	OS version	FCA	Adapter firmware	Adapter driver	Secure Path	Clustering
United Linux/SuSE Linux (32-bit)	UL1.0/SLES8 SP2a 2.4.19-64GB-SMP	QLA2340 (FCA2214) QLA2342 (FCA2214DC)	1.34	6.06.50	3.0b	Lifekeeper4.3
	UL1.0/SLES8 SP3 2.4.21-169smp	QLA2340 (FCA2214)		6.06.50 7.00.03	3.0c Native Multipath Driver	Serviceguard 11.15.02 Lifekeeper4.4
	UL1.0/SLES8 SP3 2.4.21-215smp	QLA2342 (FCA2214DC) BL20P G2 Mezzanine Cards				Serviceguard 11.15.02 Lifekeeper4.5
United Linux/SuSE Linux (64-bit)	UL1.0/SLES8 SP3 2.4.21-128smp	A6836A	Native	6.06.50 or 7.00.03	3.0c Native Multipath Driver	None
	UL1.0/SLES8 SP3 2.4.21-215 uni/smp 2.4.21-223 uni/smp 2.4.21-231 uni/smp			7.00.03		Serviceguard 11.15.02

Common platform issues

The following issues have been identified on all operating systems.

Long distance gateway support

Continuous Access EVA 1.2 is supported in extended SANs (including FCIP and SONET) using the following switch and gateway pairings and with the requirements shown in [Table 4](#) through [Table 6](#):

- B-series switch and HP SR2122-2 gateway
- B-series switch and SAN Valley SL700, SL1000, or SL2100 gateway
- B-series switch and CNT 1000, 1001, 1100, 1101, or 3000 gateway
- B-series switch and Brocade MPR-7420 gateway
- B-series switch and Ciena CN2000 gateway
- B-series switch and LightSand S600B or S2500B gateway
- C-series MDS switch and IPS8 or PA-FC-1G gateway
- M-series switch and HP SR2122-2 gateway
- M-series switch and SAN Valley SL700 or SL1000 gateway
- M-series switch and LightSand S600B or S2500B gateway

Table 4: General requirements for long distance gateways

Characteristic	Requirement
Bandwidth	Must be dedicated to storage
Maximum data replication groups	See Table 5 and Table 6 for specific requirements depending on network packet loss ratios, bandwidth, fabric configuration, and intersite latencies
Maximum Transmission Unit (IP networks)	Set to 1500 Bytes
Maximum latency	100 ms one way (200 ms round trip)
Average packet loss ratio	0.0012% over 24 hours in low-loss networks (see Table 5) 0.2% averaged over 24 hours in high-loss networks , not to exceed 0.5% for more than 5 minutes in 2 hours (see Table 6)
Latency jitter ¹	Not to exceed 10 mSec over 24 hours

¹ Latency jitter is the difference between the minimum and maximum latency observed over a 24-hour period. It is used to characterize networks where latency varies. Jitter is unique to the path; for example, in a ring, jitter for a short path is calculated using the short path, and jitter for a long path is calculated using the long path.

[Table 5](#) and [Table 6](#) show the maximum supported data replication (DR) groups and minimum bandwidth requirements for each switch-gateway pair in low loss and high loss networks. In low loss networks, the average packet loss is less than or equal to 0.0012%. In high loss networks, the average packet loss is less than or equal to 0.2%.

Table 5: Low loss network requirements for long distance switch-gateway pairs

Switch and Gateway Pair	Maximum Data Replication Groups and Minimum Bandwidth	
	For Dual Fabric	For Single or Shared Fabric
B-series and HP SR2122-2	Up to 16 DR groups when bandwidth exceeds 45 Mb/sec	Up to 16 DR groups when bandwidth exceeds 90 Mb/sec
B-series and SAN Valley SL700 or SL1000	Up to 16 DR groups when bandwidth exceeds 5 Mb/sec	Up to 16 DR groups when bandwidth exceeds 10 Mb/sec
B-series and SAN Valley 2100	Up to 16 DR groups when bandwidth exceeds 45 Mb/sec	Up to 16 DR groups when bandwidth exceeds 90 Mb/sec
B-series and CNT 1000, 1001, 1100, or 1101	Up to 16 DR groups when bandwidth exceeds 60 Mb/sec	Up to 16 DR groups when bandwidth exceeds 120 Mb/sec
B-series and CNT 3000	Up to 16 DR groups when bandwidth exceeds 45 Mb/sec	Up to 16 DR groups when bandwidth exceeds 90 Mb/sec
B-series and Brocade MPR-7420	Up to 16 DR groups when network exceeds 1 GbE	
B-series and Ciena CN2000	Up to 16 DR groups when bandwidth exceeds 45 Mb/sec	Up to 16 DR groups when bandwidth exceeds 90 Mb/sec
B-series and LightSand S600B or S2500B	Up to 16 DR groups when bandwidth exceeds OC-12	
C-series MDS and IPS8	Up to 16 DR groups when bandwidth exceeds 30 Mb/sec Up to 8 DR groups when bandwidth exceeds 10 Mb/sec	Up to 16 DR groups when bandwidth exceeds 60 Mb/sec Up to 8 DR groups when bandwidth exceeds 20 Mb/sec
M-series and HP SR2122-2	Up to 16 DR groups when bandwidth exceeds 45 Mb/sec	Up to 16 DR groups when bandwidth exceeds 90 Mb/sec
M-series and SAN Valley SL700 or SL1000	Up to 16 DR groups when bandwidth exceeds 45 Mb/sec Up to 4 DR groups when bandwidth exceeds 5 Mb/sec	Up to 16 DR groups when bandwidth exceeds 90 Mb/sec Up to 4 DR groups when bandwidth exceeds 10 Mb/sec
M-series and LightSand S600B or S2500B	Up to 16 DR groups when bandwidth exceeds OC-12	

Table 6: High loss network requirements for long distance switch-gateway pairs

Switch and Gateway Pair	Maximum Data Replication Groups and Minimum Bandwidth			
	Dual Fabric Maximum Latency		Single or Shared Fabric Maximum Latency	
	0 to 36 mSec	37 to 100 mSec	0 to 36 mSec	37 to 100 mSec
B-series and HP SR2122-2	not supported			
B-series and SAN Valley SL700 or SL1000	Up to 16 DR groups when bandwidth exceeds 10 Mb/sec Up to 2 DR groups when bandwidth exceeds 5 Mb/sec	Up to 8 DR groups when bandwidth exceeds 60 Mb/sec	Up to 16 DR groups when bandwidth exceeds 20 Mb/sec Up to 2 DR groups when bandwidth exceeds 10 Mb/sec	Up to 8 DR groups when bandwidth exceeds 120 Mb/sec
B-series and SAN Valley SL2100	not supported			

Table 6: High loss network requirements for long distance switch-gateway pairs (Continued)

Switch and Gateway Pair	Maximum Data Replication Groups and Minimum Bandwidth			
	Dual Fabric Maximum Latency		Single or Shared Fabric Maximum Latency	
	0 to 36 mSec	37 to 100 mSec	0 to 36 mSec	37 to 100 mSec
B-series and CNT 3000	Up to 8 DR groups when bandwidth exceeds 45 Mb/sec		Up to 8 DR groups when bandwidth exceeds 90 Mb/sec	
B-series and Brocade MPR-7420	Up to 16 DR groups when network exceeds 1 GbE			
B-series and Ciena CN2000	not supported			
B-series and LightSand S600B or S2500B	not supported			
C-series MDS and IPS8	Up to 16 DR groups when bandwidth exceeds 45 Mb/sec Up to 8 DR groups when bandwidth exceeds 10 Mb/sec	Up to 8 DR groups when bandwidth exceeds 60 Mb/sec	Up to 16 DR groups when bandwidth exceeds 90 Mb/sec Up to 8 DR groups when bandwidth exceeds 20 Mb/sec	Up to 8 DR groups when bandwidth exceeds 120 Mb/sec
M-series and HP SR2122-2	not supported			
M-series and SAN Valley SL700 or SL1000	Up to 16 DR groups when bandwidth exceeds 45 Mb/sec Up to 8 DR groups when bandwidth exceeds 10 Mb/sec		Up to 16 DR groups when bandwidth exceeds 90 Mb/sec Up to 8 DR groups when bandwidth exceeds 20 Mb/sec	
M-series and LightSand S600B and S2500B	not supported			

VCS code load restrictions

Before installing VCS v3.020 on storage systems running Continuous Access EVA, you must:

- Be running VCS v3.010 or later.
- Be running Command View EVA 3.2 or later.
- Not be running more than two VCS versions (one of which must be v3.020) in multiple relationships between the source and destination storage systems.
- Suspend DR group replication for the duration of the code load process, even if the intersite links are not available.
- Perform the code load process under conditions of no leveling and no logging.

A code load of one controller forces both controllers on a storage system to reboot. If the controller being upgraded is used as a destination for replication I/O, the source controller logs new I/O while the destination controller reboots. Resume the replication to allow the controller

to perform a merge. Wait for the merge to conclude after a code load, or wait three minutes—whichever is longer—before performing the code load on the other storage system in the relationship.

All storage systems involved in a DR relationship must be running with fully functional controllers during a code load. Only two VCS versions are supported at any one time when upgrading a multiple array relationship. For example, three arrays in a relationship cannot have three different VCS versions. If one is running VCS v3.010 and two are running v3.014, upgrade the v3.010 to v3.014, and then start upgrading all to v3.020. HP does not support different VCS versions among controllers in a replicating relationship for a duration longer than a week (168 hours).

Note: Some high-performance applications with low time-out thresholds may time out during the code load process. It is recommended that you perform VCS upgrades during periods of minimal activity.

Maximum storage systems and intersite distances

When operating at long delays between Storage Management Appliances and remote Enterprise Virtual Arrays, expect less than optimum performance with management actions such as the creation of DR groups or basic device discovery. Performance and discovery times scale inversely with the number of arrays, the number of Vdisks in those arrays, and the length of the delay. (Refer to the Distance Versus Array Manageability table in the *HP StorageWorks Continuous Access EVA v1.1B Design Reference Guide*.)

Similarly, when replicating over long distances, either synchronously or asynchronously, it is possible to saturate buffers within the system. This can lead to excessive delays in completing the I/O. When some buffers are full, the controller returns a “device-busy” status to the requesting server and forces the server to time-out the request. Different operating systems respond in different ways, for example, forcing the media offline.

Presenting DR group members to the same FCA

All members of a DR group must be presented to the same FCA on hosts with more than one FCA per fabric (for example, multiple FCA pairs, multiple dual-channel FCAs, or a combination of single and dual-channel FCAs). All DR group members must also be preferred to the same controller with the same failover characteristics.

This restriction is required to keep the DR group members using the same host FCA to EVA path. In the event of a path or controller failure, the members collectively fail over to the other path, thus preserving write order across the members of the DR group.

Note: Additional members added to a DR group will have the parameters of the original member. This may affecting multipathing of OS applications.

Asynchronous replication with failsafe enabled

Running in asynchronous replication mode with failsafe enabled is not supported. There is no benefit when using these two modes together in normal operation, and doing so may induce LUN instability after the loss of intersite links.

Switch support

For a list of supported Fibre Channel switches, refer to the *HP StorageWorks SAN Design Reference Guide*. SAN extension products are documented in the *HP StorageWorks Continuous Access and Data Replication Manager SAN Extensions Reference Guide*. These references can be obtained from the SAN Infrastructure web site at <http://h18006.www1.hp.com/products/storageworks/san/documentation.html>.

Secure Path dynamic load balancing

Continuous Access EVA does not support using Secure Path dynamic load balancing with any LUN that is a member of a DR group. This applies to all versions of Secure Path on any operating system.

Platform-specific issues

The *HP StorageWorks Continuous Access EVA Design Reference Guide* has been expanded to include a chapter on operating system and application design considerations. Refer to this documentation for information specific to your operating system with Continuous Access EVA.

The following issues have been identified that are specific to an operating system. If your operating system is not listed, there are no pending issues.

Microsoft Windows

The following issues have been identified for Microsoft Windows.

Windows MSCS clusters using multi-member DR groups

There are two restrictions you must follow when using multi-member DR groups with Microsoft Windows clusters:

1. When presenting Vdisks to cluster nodes, present all members of a group to the same set of FCAs. The group cannot be split across multiple sets of FCAs. For example, if all four FCAs in a host need to access an eight-member DR group, then all of the group members can be presented to any two FCAs or to all four FCAs. However, the group cannot be split with four members presented to two FCAs and the remaining four members presented to the other two FCAs.
2. When making LUN assignments, assign each shared Vdisk the same LUN number on every host. For example, if host A is assigned Vdisk5 as LUN 3, then host B must also be assigned Vdisk5 as LUN 3.

KGPSA-CB FCA with Core Switch 2/64

Windows hosts in Continuous Access configurations can incur a failure with one of the redundant paths when the KGPSA-CB FCAs within that host are directly connected to any B-series switch running version 4.x firmware. When the failure occurs, host I/O continues to the remaining FCA, but the failed path remains unusable until the host is rebooted. Wherever possible, HP recommends connecting the hosts to other switches in the fabric that are not running version 4.x firmware.

Windows 2003 clusters with similar FCAs

Windows 2003 clusters are supported only when all hosts use the same type of FCA. For example, if one host is using KGPSA-CA adapters, then any host in the same cluster must also use KGPSA-CA adapters.

Windows caching

Small files in Microsoft Windows can be held in cache, disrupting replication to the remote controller. Flush all cache files, if possible, before performing a failover. One source of information for flushing data caches on CPU and kernel architecture can be obtained from:

<http://msdn.microsoft.com/library/en-us/wcedsn40/html/cgconimplementingcacheflushroutines.asp>.

Another option is to use the HP StorageWorks Business Copy EVA application to flush the cache. For more information, go to:

<http://h18006.www1.hp.com/products/storage/software/bizcopyeva/index.html>.

Note: Rebooting of the source host(s) is the only qualified procedure tested at the time of this release note.

Bootling from the SAN

Bootling from the SAN is supported on 64-bit Windows.

Red Hat and SuSE Linux

Lifekeeper clusters must be zoned so that clustered hosts can see only one controller port per fabric. The operating system host mode of the controller must also be set to “custom.”

Sun Solaris

The following issues have been identified for Sun Solaris.

Expanding volumes

The procedure for increasing the volume size of a Vdisk with Command View EVA, as detailed in the *Sun Solaris Kit V2.0 Enterprise Virtual Array Installation and Configuration Guide*, part number AA-RRODB-TE, is not sufficient for VCS v3.01. Use the following procedure instead:

1. Download and install Solstice Disk 4.2.1. You can obtain this utility and get more information and documentation from the Sun web site at <http://www.sun.com>.
2. Create and mount a file system on a Vdisk using the `newfs` and `mount` commands.
3. Write data to the newly created and mounted Vdisk.
4. Unmount the Vdisk.
5. Increase the volume size with the Command View EVA.
6. Open the Solaris *format* utility and select the Vdisk.
7. Perform the `type` command, option 0.
8. Perform the `label` command.
9. Exit the Solaris *format* utility.

10. Perform the `growfs` command. You may need to perform the `label` and `growfs` commands twice.
11. Remount the Vdisk and verify that the data written in step 3 is intact.

Transport failure with Solaris 2.6

Whenever a server running Solaris 2.6 loses communication to all four controller ports, the console window displays a “transport failure” message, and the system stops responding or hangs. If this occurs, reboot the server. This error condition does not occur with Solaris 7, 8, and 9.